

Amendment and Response

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Serial No.: 10/564,101

Confirmation No.: 7194

Filed: June 13, 2006

For: ADHESIVE COMPOSITION WITH DECREASED POLARITY UPON POLYMERIZATION**Remarks**

The Office Action mailed February 13, 2009 has been received and reviewed. Claims 18 and 32 having been amended, claims 1-17 having been previously cancelled, and claims 33-35 having been added, the pending claims are claims 18-35. Reconsideration and withdrawal of the rejections are respectfully requested.

The 35 U.S.C. §103 Rejection

The Examiner rejected claims 18-32 under 35 U.S.C. §103 as being unpatentable over Fischer (U.S. Published Application No. 2003/0199605 A1). The Examiner rejected claims 18-32 under 35 U.S.C. §103 as being unpatentable over Fischer (U.S. Published Application No. 2003/0199605 A1) and ESPE Dental AG (WO 01/44338 A1). Claim 18 having been amended, these rejections are rendered moot; insofar as they apply to the presently pending claims, these rejections are respectfully traversed.

Claim 18 has been amended to recite that the dental composition is a self-etching dental adhesive. Support for this is at page 1, lines 4-5. In contrast, Fischer relates to a dental sealing composition to be used for filling and/or sealing a root canal of a tooth (e.g., at paragraph [0018]). This is completely different from a self-etching dental adhesive composition used for adhering to dentin and/or enamel, and which provides a basis for the application of a filling material to be applied later.

It is respectfully submitted that one of skill in the art would not be motivated to modify the sealing compositions described by Fischer to create self-etching dental adhesive compositions. Example 1 of Fischer relates to a 2-part composition, whereas the other Examples relate to 1-part compositions. Simply because individual components are used in different working examples is simply not sufficient, and amounts to the inappropriate use of hindsight, particularly when such formulations are so different (e.g., some include initiators and others do not).

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ESPE Dental AG (WO 01/44338 A1) does not cure the deficiencies of Fischer. Reconsideration and withdrawal of the rejections under 35 U.S.C. §103 are respectfully requested.

New Claims

New claim 33, which depends from claim 22, is directed to a dental composition wherein the total amount of components (a) and (b) is in a range of about 30 to about 70 parts by weight. Support for this can be found in the originally filed claims and, for example, at page 6, lines 18-20. Such a claim clarifies that in this composition the etching components are not merely present as by-products. In Examples 1, 3, 7, and 8 of Fischer, the etching components are present in amounts far below this range (e.g., Ex. 1: 10 (5+5); Ex. 3: 5; Ex. 7: 3, Ex. 8: 5). Example 4 of Fischer does not contain either of components (a) or (b) of the present invention.

New claim 34 is directed to a dental composition comprising: a) at least one phosphoric acid ester having at least one substituent with one ethylenically unsaturated moiety, wherein the substituent is bonded to the phosphorous atom; b) at least one phosphoric acid ester having at least one substituent with two or more ethylenically unsaturated moieties, wherein the substituent is bonded to the phosphorous atom; c) at least one initiator; d) an additional component selected from unsaturated monomers and unsaturated prepolymers; and e) a solvent in an amount of 1 wt-% to 15 wt-%, wherein the solvent comprises water. Support for this can be found, in Applicants' Examples and at page 7, lines 7-8 and page 13, line 14, for example. Including water helps to improve the wetting and etching properties of the composition. Fischer mentions that the composition may contain other additives such as diluent resins (e.g., at paragraph [0068]), and solvents (e.g., at paragraph [0094]); however, Fischer does not mention incorporating water into the composition. Moreover, none of the examples provided by Fischer contains a solvent.

New claim 35 provides a dental composition comprising: a) at least one phosphoric acid ester having at least one substituent with one ethylenically unsaturated moiety, wherein the substituent is bonded to the phosphorous atom; b) at least one phosphoric acid ester having at

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least one substituent with two or more ethylenically unsaturated moieties, wherein the substituent is bonded to the phosphorous atom; c) at least one initiator; and d) an additional component selected from unsaturated monomers and unsaturated prepolymers; wherein component (b) is present in the composition in an amount of about 150 to about 250 parts by weight based on about 100 parts by weight of component (a). Support for this can be found in the originally filed claims and, for example, at page 6, lines 13-17. Using a combination of components (a) and (b), and in particular, component (b) in excess provides a composition showing a improved properties: decrease in polarity upon polymerization; good adhesion to hard tooth structure; and less water uptake if the hardened composition is stored in water (see, for example, the Examples and Tables 1 and 2).

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It is respectfully submitted that the pending claims are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives at the telephone number listed below if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted

By

Mueting, Raasch & Gebhardt, P.A.

P.O. Box 581336

Minneapolis, MN 55458-1336

Phone: (612) 305-1220

Facsimile: (612) 305-1228

June 15, 2009
Date

By:

Ann M. Mueting

Reg. No. 33,977

Direct Dial (612) 305-1217

CERTIFICATE UNDER 37 CFR §1.8:

The undersigned hereby certifies that this paper is being transmitted by facsimile in accordance with 37 CFR §1.6(d) to the Patent and Trademark Office, addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 15th day of June, 2009, at 10:09 am (Central Time).

By:

Sara E. Wigan
Name: Sara E. Wigan